



Instruction Manual (ver. IW)

IW-1

IW-2

IW-3

IW-4

IW-5

Introduction

The iPort™ In-Wall Docking System allows an Apple iPod® to become part of a whole-home audio system, and/or to be used as a source in a variety of local audio systems. Before installing and using the iPort please read and follow all of the instructions in this guide carefully.

iPort System Components and Capabilities

This manual covers five iPort systems (IW-1 – IW-5). Each system has different capabilities and includes different components.

Note: Except where noted, connections and installation are the same for all five systems.

IW-1 System (#70001) Capabilities:

- Delivers local-zone unbalanced audio from iPod (up to 20 feet).
- Allows for line-level volume control (requires an optional #70071 or #70072 line-level volume control).
- Charges the iPod while it is docked.

IW-1 System Box Contents:

- (1) iPort In-Wall Docking System
- (1) iPort Unbalanced Audio Wallplate
- (1) 15V DC Regulated Power Supply

IW-2 System (#70002) Capabilities:

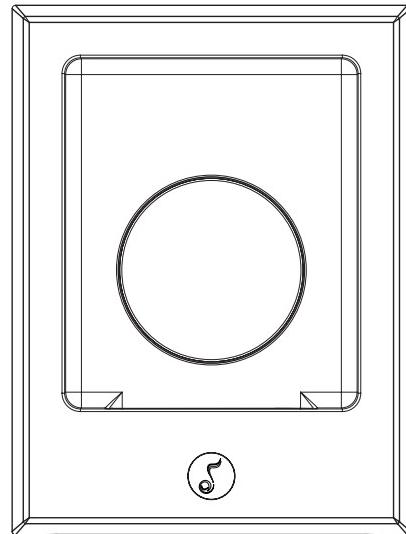
- All IW-1 capabilities PLUS:
- Allows line-of-sight IR remote control of iPod functions (requires optional iPort #70031 or #70032 remote control unit, or a compatible 3rd-party remote).

IW-2 System Box Contents:

- (1) iPort In-Wall Docking System (with IR control capability)
- (1) iPort Unbalanced Audio Wallplate
- (1) 15V DC Regulated Power Supply

IW-3 System (#70003) Capabilities:

- All IW-2 capabilities PLUS:
- Delivers long-distance balanced audio from iPod (up to 500 feet).
- Allows extensive long-distance IR control of iPod functions via Wallplate IR connection (requires compatible 3rd-party controller).



Required Tools

The following tools are required to install the iPort:

- #2 Phillips screwdriver
- Wire cutters and wire strippers
- RJ-45 cable crimp tool and modular connectors
- Sheet rock saw (if retrofitting in an existing wall)
- Small flat-head screwdriver (if using an optional line-level volume control)

IW-3 System Box Contents:

- (1) iPort In-Wall Docking System (with IR control and balanced audio capability)
- (1) iPort Balanced Audio Wallplate
- (1) 15V DC Regulated Power Supply

IW-4 System (#70004) Capabilities:

- All IW-3 capabilities PLUS:
- Allows extensive long-distance RS-232 control of iPod functions with 2-way communication (requires compatible 3rd-party controller).

IW-4 System Box Contents:

- (1) iPort In-Wall Docking System (with IR control, balanced audio and RS-232 capability)
- (1) iPort Balanced Audio Wallplate
- (1) RS-232 Cable (RJ-11-to-DB-9 connections)
- (1) 15V DC Regulated Power Supply

IW-5 System (#70005) Capabilities:

- All IW-4 capabilities PLUS:
- Delivers long-distance balanced video from iPod photo players

IW-5 System Box Contents:

- (1) iPort In-Wall Docking System (with IR control, balanced audio, balanced video and RS-232 capability)
- (1) iPort Balanced Video Wallplate
- (1) iPort Balanced Audio Wallplate
- (1) RS-232 Cable (RJ-11-to-DB-9 connections)
- (1) 15V DC Regulated Power Supply

iPod Models Supported

All iPort IW systems can be used with the following iPod models: iPod photo, iPod mini, 4th Generation iPod with Click Wheel, 3rd Generation iPod with touch wheel and buttons. See *Adjusting the iPort for Different iPod Models*, on page 10.

Selecting an Installation Location

The iPort is designed for installation and use in normal interior environments. When selecting an installation location for the iPort, please consider the following:

- The iPort is not waterproof, nor is it water-resistant. Do not install the iPort outside or in a humid or wet environment.
- The iPort cutout is 4" (102mm) wide x 5 9/16" (141mm) high. There also must be at least 3 1/2" (89mm) depth within the wall cavity for the iPort and its connections.

- The iPort has angled screw mounting holes on both sides that allow it to be installed up against a stud. (See *Installing The iPort In A Wall*, on page 9.)
- Direct sunlight can interfere with IR operation. Avoid installation locations that are in direct sunlight a portion of the day.

iPort Rear-Panel Connections

See Figure 2

RJ-45 Video Connection: Connects to the iPort Video Wallplate by Cat5 cable. Transmits balanced or unbalanced NTSC video from iPod photo players to the Video Wallplate.

RJ-45 Audio Connection: Connects to the iPort Audio Wallplate via Cat5 cable. Transmits balanced or unbalanced audio to the Wallplate; receives IR from and transmits/receives RS-232 control data to and from the Balanced Audio Wallplate; receives +15V DC power from the Wallplate.

Volume Control YES/NO switch: In the left (*NO*) position, audio is routed directly to the RJ-45 Audio Connection; in the right (*YES*) position, audio is routed in and out through the 5-Pin Screw Connector (see below).

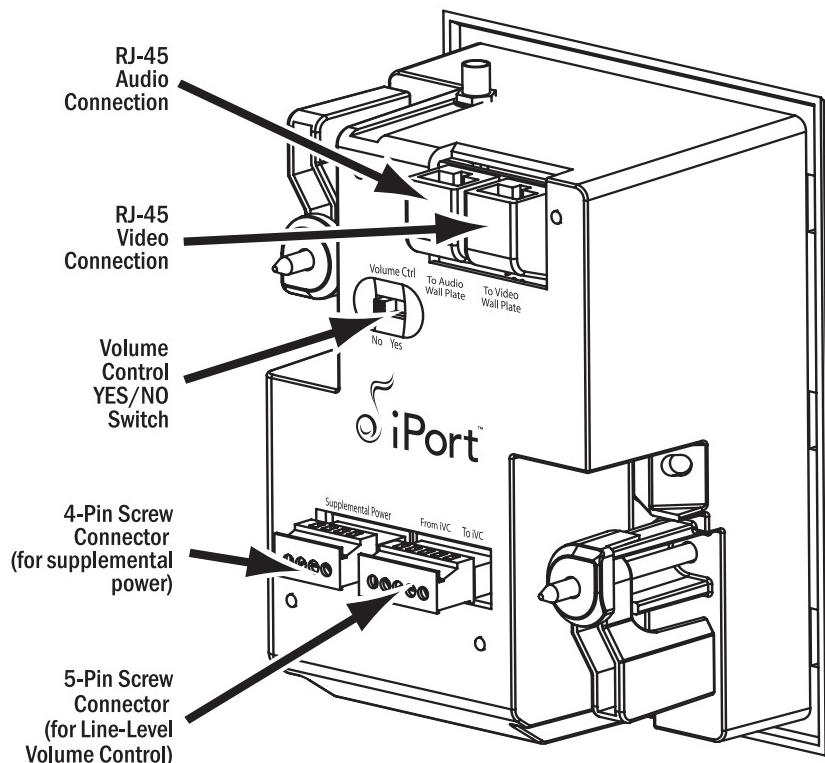
5-Pin Screw Connector: Connects to an optional #70071 or #70072 Line-Level Volume Control, providing volume control in local-zone systems (see above).

4-Pin Screw Connector: Connects to the Aux Power connector on the Audio Wallplate. Allows the use of large-gauge wire to minimize power supply voltage loss in installations where the Wallplate is located more than 250 feet from the iPort.

Note: The 4-Pin connector has two parallel sets of Supplemental Power connections. You can use either set.

In addition to the above connections, the rear panel also has two RotoLock® clamps. When properly tightened, the RotoLock clamps hold the iPort firmly on the mounting surface. (See *Installing the iPort in a Wall*, page 9.)

Figure 2:
iPort Utility Box Connections



iPort System Connections — IW-1 / IW-2

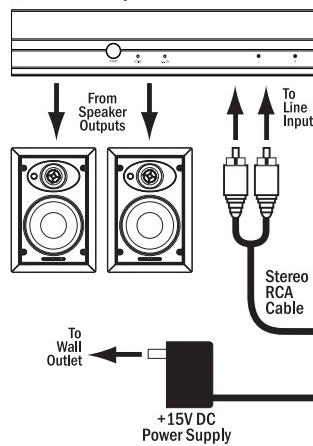
See *Figure 3*

IW-1 and IW-2 systems' unbalanced audio output is designed for use in a local-zone system where the audio equipment is located less than 20 feet from the iPort. In IW-1 systems the iPod is controlled only from its front panel; in IW-2 systems the iPod can be controlled from its front panel or from an optional #70031 or #70032 IR remote control (or compatible 3rd-party remote).

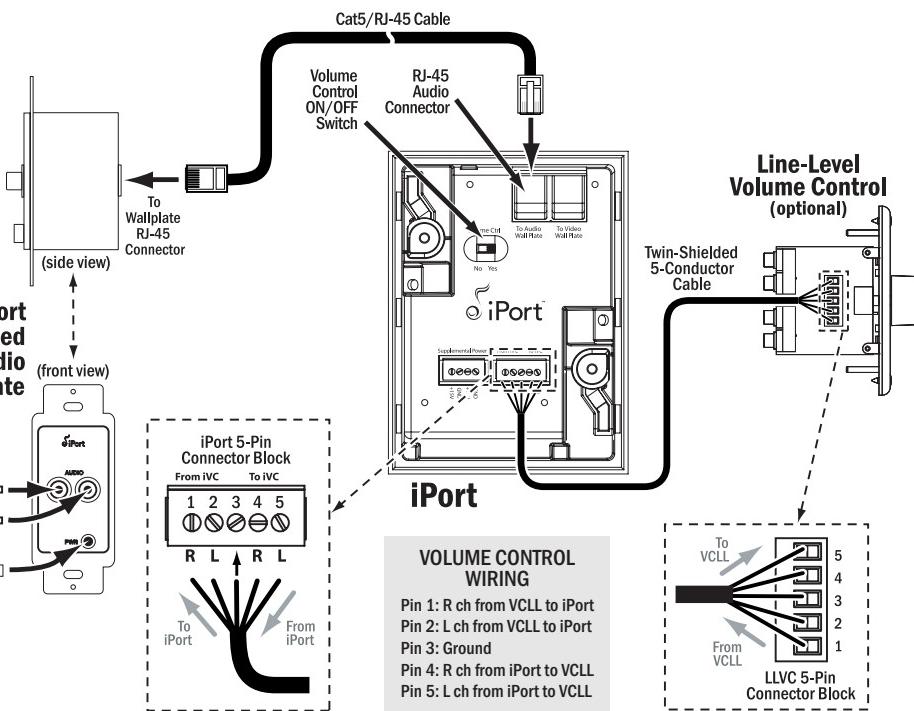
Figure 3:

IW-1 & IW-2 Local-Zone System Connections

Local Zone Amplifier



iPort Unbalanced Audio Wallplate



1. Before making connections, run a length of Cat5 cable through the wall from the iPort location to the iPort Wallplate location.
 - Find a location for the Wallplate that is near both a source of AC power and the local-zone audio system.

2. Install RJ-45 connectors on both ends of the Cat5 cable as explained in the *Cat5/RJ-45 Cable Wiring* sidebar on page 6.

The unbalanced audio RJ-45 pin assignment is:

Pin 1:	Data Receive	Pin 5:	Audio Right
Pin 2:	Data Transmit	Pin 6:	Unused
Pin 3:	Audio Left	Pin 7:	Ground
Pin 4:	Unused	Pin 8:	+15V

3a. If the system includes a #70071 or #70072 line-level volume control, set the iPort's Volume Control YES/NO switch to the **right** (**YES**) position (volume control in system).

3b. Use 5-conductor twin-shielded wire to connect the volume control to the iPort 5-pin connector block. To avoid noise, connect the wires as shown in *Figure 3*.

The volume control connector pin assignments are:

Pin 1: R ch line-level audio from volume control to iPort

Pin 2: L ch line-level audio from volume control to iPort

Pin 3: Ground

Pin 4: R ch line-level audio from iPort to volume control

Pin 5: L ch line-level audio from iPort to volume control

Note: Do not use Cat5 wire to make these connections. This wire carries high-impedance unbalanced line-level audio and must be twin-shielded to avoid noise. Two standard stereo RCA audio cables with the ends removed will also work for this application.

4. Plug the RJ-45 connectors into the *Audio* jack on the iPort and the RJ-45 jack on the Wallplate.

5. Install the Unbalanced Audio Wallplate in an electrical box in the room where the audio equipment is located.

Important: Do not install the iPort Wallplate in the same electrical box as AC house wiring, a light switch or any other high-voltage device or control. The Wallplate can share gang boxes with other iPort Wallplates or with controls such as A/B speaker switches, infrared receivers and volume controls, if these other devices are rated as Class 2 devices according to the National Electrical Code.

6. Plug the included 15V DC power supply into the *Power* connector on the iPort Wallplate.

Cat5/RJ-45 Cable Wiring

All RJ-45 cables used in iPort installations must be wired according to the T568A ("Straight-Through") Standard, with cables wired identically at both ends.

To prepare Cat5/RJ-45 cables for iPort installations:

1. Pull the Cat5 wire through the wall between the desired locations.

2. Use a stripper or knife to strip about 1" of the cable jacket off each end of the wire.

- Be careful not to nick any of the individual wires.

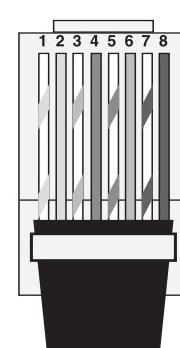
3. Untwist the wire pairs and spread them flat. Arrange them as shown in the diagram.

4. Trim the ends of the individual wires to $\frac{1}{2}$ " in length, making sure that they are even with each other. Flatten the wires against each other, leaving no space between them.

5. Hold the RJ-45 connector clip side-down and insert the Cat5 wire ends firmly into the connector. Make sure that all the wires are flat all the way to the very front of the connector.

6. Re-confirm that the color orientation matches the diagram and that cable jacket fits against the connector stop.

7. Firmly crimp the RJ-45 connector with the crimp tool. Confirm that the connector is crimped firmly and that all the wires are flat right up against the front of the connector. If even one of these wires is incorrect, cut the connector off the cable and repeat steps 2 – 7 with a new RJ-45 connector.



Pin 1: Green Stripe
Pin 2: Green Solid
Pin 3: Orange Stripe
Pin 4: Blue Solid
Pin 5: Blue Stripe
Pin 6: Orange Solid
Pin 7: Brown Stripe
Pin 8: Brown Solid



7. Use a stereo RCA audio cable to connect the iPort Wallplate to a source input on the local-zone audio system.
8. After installing the iPort in the wall (see *Installing the iPort in a Wall*, page 9), plug the power supply into a wall outlet.

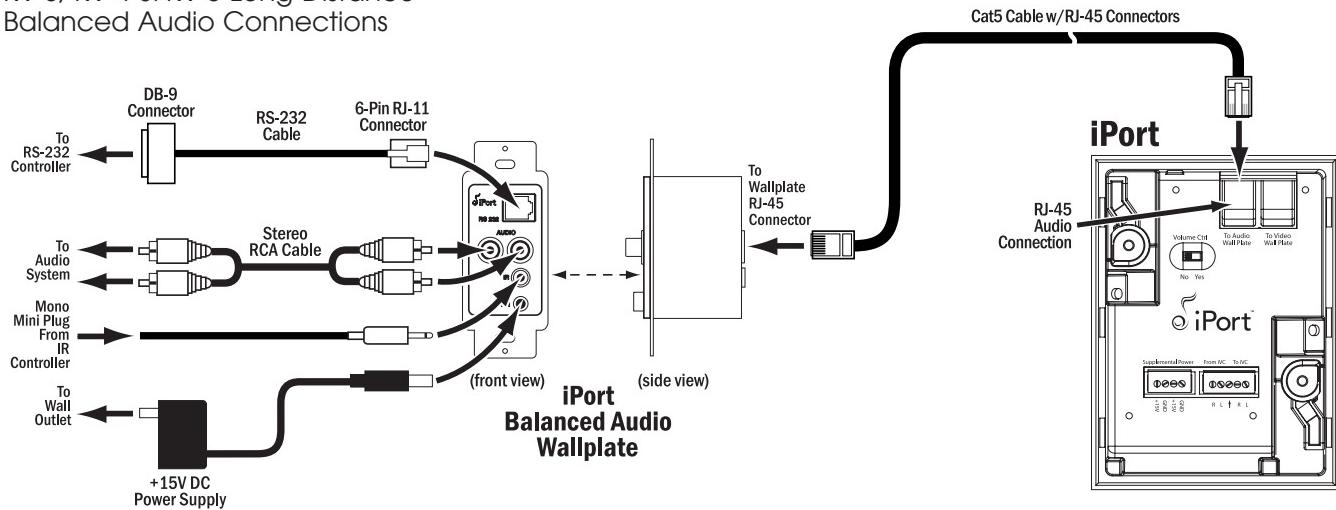
iPort System Connections — IW-3 / IW-4 / IW-5

See *Figure 4*

IW-3, IW-4 and IW-5 systems have balanced audio output that is designed for use in audio systems where the audio equipment is located up to 500 feet from the iPort. In addition to being controlled from its front panel and by an optional #70031 or #70032 IR remote control, the iPod in IW-3 systems can be controlled by non line-of-sight IR control devices. In IW-4 and IW-5 systems the iPod can also be controlled by RS-232 control devices, with 2-way communication (including iPod metadata).

Figure 4:

IW-3, IW-4 & IW-5 Long-Distance
Balanced Audio Connections



1. Before making connections, run a length of Cat5 cable through the wall from the iPort location to the iPort Wallplate location.
 - Find a location for the Balanced Audio Wallplate that is near both the audio system and a source of AC power.
 - **For IW-5 systems:** Find a location for the Balanced Video Wallplate that is near the video monitor. Run a second Cat5 cable through the wall from the iPort location to the Balanced Video Wallplate location. Maximum length for the video Cat5 cable is 250 feet.
2. Install RJ-45 connectors on both ends of the Cat5 cables as explained in the *Cat5/RJ-45 Cable Wiring* sidebar on page 6.

The Balanced Audio RJ-45 pin assignment is:

Pin 1:	Data Receive	Pin 5:	Audio Right +
Pin 2:	Data Transmit	Pin 6:	Audio Right -
Pin 3:	Audio Left +	Pin 7:	Ground
Pin 4:	Audio Left -	Pin 8:	+15V

The Balanced Video RJ-45 pin assignment is:

Pin 1:	B Video +	Pin 5:	S-Video Y +
Pin 2:	B Video -	Pin 6:	S-Video Y -
Pin 3:	S-Video C +	Pin 7:	Ground
Pin 4:	S-Video C -	Pin 8:	+15V

3. Set the iPort's Volume Control YES/NO switch to the **left** (NO) position (no volume control in system).
 - The iPort's volume control circuit will affect all zones in a multi-zone system. It is designed for use only in a local-zone system.
4. Plug the audio Cat5 cable's RJ-45 connectors into the *Audio* jack on the iPort and the RJ-45 connector on the Audio Wallplate.
5. Install the iPort Audio Wallplate in an electrical box in the room where the audio equipment is located.

Important: Do *not* install an iPort Wallplate in the same electrical box as AC house wiring, a light switch or any other high-voltage device or control. The Wallplates can share gang boxes with each other, or with other controls such as A/B speaker switches, infrared receivers and volume controls, if these other devices are rated as Class 2 devices according to the National Electrical Code.

6. Plug the included 15V DC power supply into the *Power* connector on the Wallplate.
7. Use a stereo RCA audio cable to connect the Wallplate to a source input on the audio system.
8. If the audio system has a compatible IR control output, use a mono 3.5mm mini cable to connect it to the Wallplate's *IR* connector.
9. If the audio system has a compatible RS-232 control output, connect it to the Wallplate's RS-232 connector. The Wallplate accepts a male RJ-11 connector with the following pin configuration:

Pin 1:	PC RX	Pin 4:	PC TX
Pin 2:	GND*	Pin 5:	PC RX
Pin 3:	GND*	Pin 6:	Unused

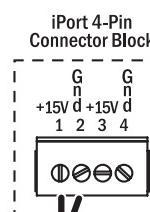
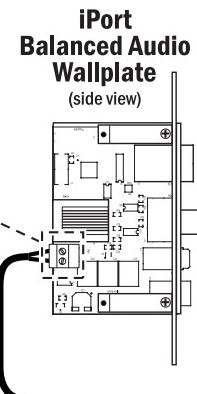
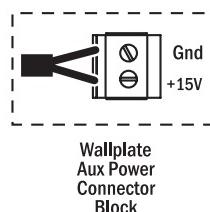
* Only one GND pin connection is required.

Note: For complete information about RS-232 connections, programming and operation go to www.iportmusic.com.

10. In installations where the Audio Wallplate is located more than 250 feet from the iPort: Run a length of 16/2 speaker wire through the wall, from the Wallplate's Aux Power 2-pin connector to the iPort's Supplemental Power 4-pin connector as shown below in *Figure 5*. (The connector has two parallel sets of terminals — you can use either set.) This will avoid performance degradation caused by a loss of DC voltage over wire runs longer than 250 feet.

Figure 5:

IW-3, IW-4 & IW-5
Auxiliary Power
Connection



16/2 Speaker Wire

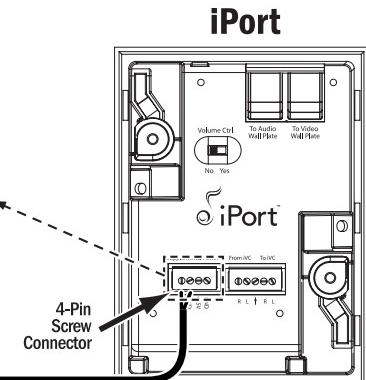
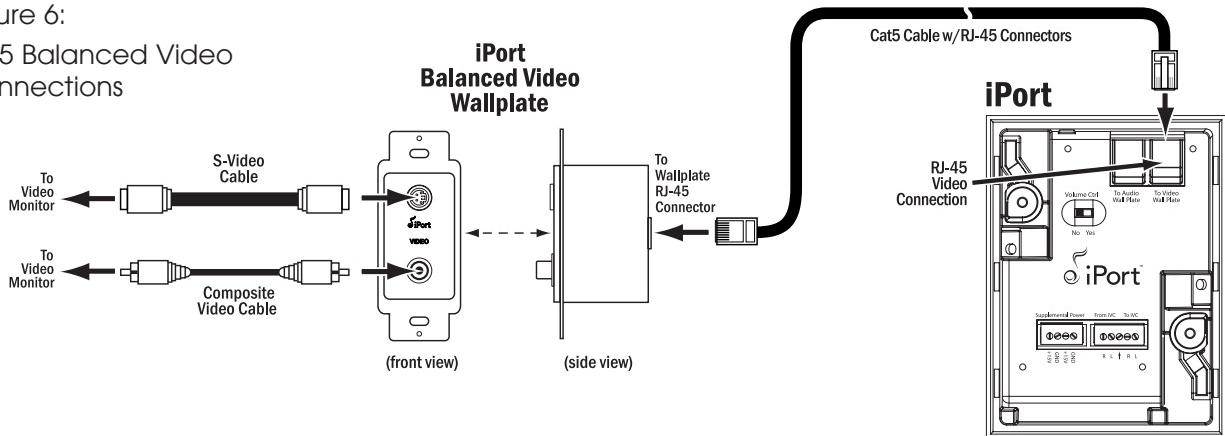


Figure 6:
IW-5 Balanced Video
Connections



11. For IW-5 Systems:

11a. Plug the video Cat5 cable's RJ-45 connectors into the *Video* jacks on the iPort and the RJ-45 connector on the Video Wallplate, as shown above in *Figure 6*.

11b. Install the iPort Video Wallplate in an electrical box in the room where the audio equipment is located.

Important: Do *not* install an iPort Wallplate in the same electrical box as AC house wiring, a light switch or any other high-voltage device or control. The Wallplates can share gang boxes with each other, or with other controls such as A/B speaker switches, infrared receivers and volume controls, if these other devices are rated as Class 2 devices according to the National Electrical Code.

11c. Connect the Video Wallplate to the video monitor or video distribution system as shown above in *Figure 6*.

Note: You can use both the S-Video and composite video connections simultaneously, if required.

12. After installing the iPort in the wall (see *Installing the iPort in a Wall*, below), plug the power supply into a wall outlet.

Installing the iPort in a Wall

The iPort features an integral RotoLock® mounting system for quick mounting directly into existing walls. Once the hole is cut and the cables are run, you can install the iPort in the wall in a matter of seconds.

1. Determine the location for the iPort.
 2. Perform an obstruction survey to be certain that there are no studs, conduit, pipes, heating ducts or air returns that will interfere with the iPort.
- Note:* You can mount the iPort directly next to wall studs on either side (see Step 9, below).
3. The iPort cutout is 4" (102mm) wide x 5 9/16" (141mm) high. There also must be at least 3 1/2" (89mm) depth within the wall cavity for the iPort and its connections.
 4. Find the cutout template provided in the iPort packaging. Position the template where the iPort is to be located and pencil an outline on the wall.

- If you are unsure about obstructions, drill a small hole in the center of the outline and insert a coat hanger wire into the hole to feel-around for possible obstructions.

5. Cut the opening using a drywall saw.

6. Make all cable connections according to *iPort System Connections*, above, bringing the wires through the wall opening. Double-check that all the connections are correct.

7. Insert the iPort utility box into the opening in the wall.

- First insert the top edge into the opening, then rotate the bottom edge into the opening.

Note: The RotoLock system can accommodate a maximum wall material thickness of $1\frac{3}{8}$ ".

8. Hand-tighten the two RotoLock screws on the iPort utility box (see *Figure 7*). The RotoLock clamps will automatically rotate into position behind the wall and begin clamping the iPort.

- When you notice resistance on the two screws the iPort has been clamped successfully.

Important: NEVER over-tighten the RotoLock screws.

9. If there are wall studs up against either side of the utility box that prevent the RotoLock clamps from operating, secure the box by hand-driving a $1\frac{1}{2}$ " #6 drywall screw (not provided) through the angled hole on the side of the chassis and into the wall stud (see *Figure 7*). **Important:** Do not over-tighten the drywall screw.

10. Attach the iPort face to the utility box (see *Figure 8*).

- Fit the track on the bottom of the rear chassis into the groove formed by the two angled capacitors on the underside of the circuit board at the bottom of the iPod face.
- Slide the face into the chassis until it fits snugly into place.

Adjusting the iPort for Different iPod Models

The iPort can accommodate the following iPod models: iPod photo, iPod mini, 4th Generation iPod with Click Wheel, 3rd Generation iPod with touch wheel and buttons. From the factory it is set-up for any iPod model with a Dock Connector that is larger than 30GB.

- To adjust the iPort for the iPod mini and other iPods with a Dock Connector that are 30GB or smaller, extend the iPort's center disc forward by rotating it counter-clockwise until you feel the first detent (see *Figure 9*, on page 11). Spring-loaded clamps at the bottom of the iPod well will hold these smaller models in place.

Figure 7:
Attaching the utility box
to a wall

If mounted next
to a stud, insert
a $1\frac{1}{2}$ " #6 drywall
screw here

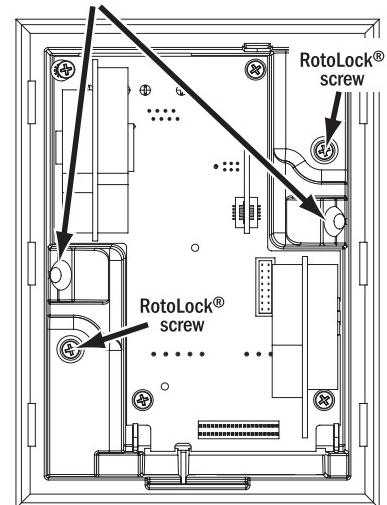
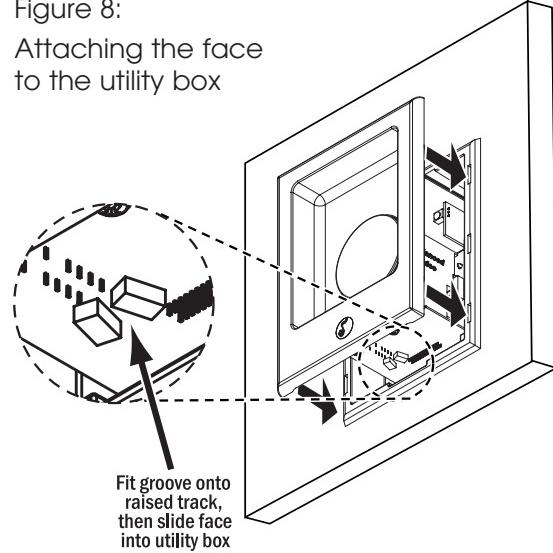


Figure 8:
Attaching the face
to the utility box



- When switching-back to iPod models with a Dock Connector that are larger than 30GB, retract the iPort's center disc backwards by rotating it clockwise until you feel the first detent (see *Figure 9*). When these larger models are placed in the iPod well the spring-loaded clamps will rotate out of the way.

Controlling the iPod in an iPort System

In IW-1 systems, the iPod is controlled from its own front panel. In IW-2 systems, the iPod can also be controlled by an optional #70031 or #70032 IR remote. An IR receiver in the iPort relays commands to the iPod through the dock connector.

In IW-3 systems, IR commands from a compatible control system can be sent to the iPort from the Balanced Audio Wallplate. In IW-4 and IW-5 systems, compatible controllers can send IR commands and RS-232 commands to the iPort from the Balanced Audio Wallplate. These commands are relayed to the iPod through the dock connector. Two-way communication from the iPod (including iPod metadata — non-program information such as song titles) is available in IW-4 and IW-5 systems with RS-232 capability.

IR Control Notes:

- iPort IR codes for universal remotes can be downloaded from www.iportmusic.com. At press time supported formats are: RTI, Phillips Pronto style and Universal Electronics (UEI). Check the web site (www.iportmusic.com) for the most up-to-date information.
- Third-generation iPod models only respond to the following IR commands: *Play/Pause*, *Next Song*, and *Previous Song*.

For iPort remote control commands, please see the instruction manual accompanying the remote.

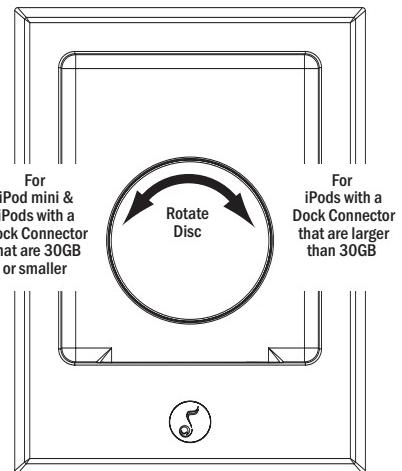
RS-232 Control Notes:

- When the RS-232 control mode is active, the controls on the iPod will not operate (the iPod interface is disabled).
- When the RS-232 control mode is active, the iPod will only respond to the following IR control codes: *Play/Pause*, *Next Track*, *Previous Track*.
- In IW-5 systems, iPod photo features cannot be controlled in the RS-232 control mode. The iPod must be taken out of the RS-232 control mode; the photo features can then be controlled from the iPod's front panel controls. The iPod must be put back into the RS-232 control mode to control other functions.
- When the RS-232 control mode is active, if the iPod is placed in the dock while in the *Play* mode it will automatically enter the *Pause* mode. This is due to the iPod protocol. The installer or programmer may wish to set the RS-232 control system to automatically send a *Play* command to return the iPod to the last playing song when it is inserted in the dock. For RS-232 commands and programming information, please go to www.iportmusic.com.

For RS-232 commands and programming information, please go to www.iportmusic.com.

Figure 9:

Adjusting the iPort for different iPod models



iPort Status Indication

The logo on the iPort front panel serves as a status indicator (see *Figure 10*, on page 12).

There are 3 illumination levels: BRIGHT, MEDIUM, and DIM. There is also an OFF setting.

Factory Default Settings:

- When the iPort is first installed, the LED illuminates DIM* for 2 minutes, then turns OFF.
- When an iPod is inserted in the iPort, the LED illuminates BRIGHT* for 2 minutes, then turns OFF.
- When the iPod is removed from the iPort, the LED illuminates DIM* for 2 minutes, then turns OFF.

* *The user can change these settings to any of the 3 illumination levels via RS-232 or either model iPort remote.*

All ON Mode: The installer or user can defeat the 2-minute turn-off function (the LED will operate as above, but will not turn OFF after 2 minutes) via RS-232 or either model iPort remote.

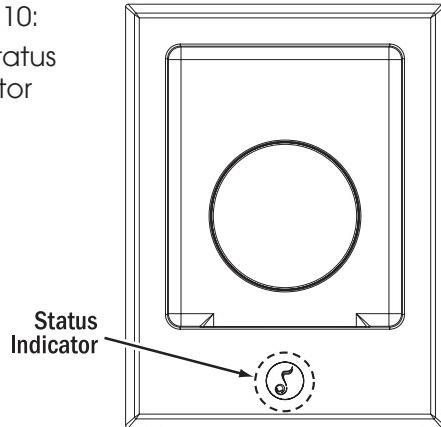
All OFF Mode: The installer or user can turn the LED OFF in all modes via RS-232 or either model iPort remote.

Note: If power to the iPort is lost or the power supply is disconnected, the iPort will return to the Factory Default Settings.

Specifications

Frequency Response:	20Hz – 20kHz ($\pm 0.25\text{dB}$) @ 500 ft. Cat5
THD+Noise:	< 0.015%, 20Hz – 20kHz @ 500 ft. Cat5
Signal to Noise:	> 90dB (A wtd.) @ 500 ft., Cat5
Maximum signal input:	1.5V RMS
Power supply:	15V DC, regulated
Dimensions (W x H x D):	4 $\frac{3}{4}$ " x 6 $\frac{5}{16}$ " x 3 $\frac{1}{2}$ " (121mm x 160mm x 89mm)
Cutout Dimensions (W x H):	4" x 5 $\frac{9}{16}$ " (102mm x 141mm)

Figure 10:
iPort Status
Indicator



Technical Assistance and Service

If you have any questions about the operation or installation of this product, please call our Technical Assistance Department at (800) 582-0772 or (949) 492-7777; from 7 a.m. to 5 p.m., Pacific Time, Monday – Friday.

If your iPort should need repair or service, contact your iPort Authorized Dealer for help, or use the following procedure:

1. Prior to calling, note the product's model number, serial number, purchase date, and the name and address of the dealer where you purchased the product.
2. Contact our Technical Assistance Department at the above number(s) and describe the problem the unit is experiencing. If applicable, they will issue a Return Authorization Number.

IMPORTANT: YOU MUST HAVE PRIOR AUTHORIZATION TO RETURN YOUR iPort!

3. If you're directed to return the unit to iPort for repair, pack the unit in its original shipping carton. If needed, you can obtain replacement packaging from us for a small charge. Note: it is best if you place the box into an additional outer "overcarton" before shipment to minimize a chance of theft in shipment. Please include a copy of the original bill of sale inside the package.
4. Contact a package delivery service such as United Parcel Service or Federal Express, to arrange prepaid (not collect) shipping. Do not use the U.S. Postal Service.

IMPORTANT: Freight collect shipments will be refused.

5. Write the Return Authorization Number on the outside of the shipping carton.

6. Ship the packaged unit to:

Quality Assurance Department
iPort
212 Avenida Fabricante
San Clemente, CA 92672-7531

WARRANTY COVERAGE (U.S. ONLY)

iPort provides the following coverage for units that fail under normal use and according to these instructions due to a defect in workmanship or materials: For units installed inside a residence, iPort will, at its option and at no charge, repair or replace the components of such unit that prove to be defective for a period of one year from the date of purchase. For units installed inside non-residential locations, iPort will, at its option and at no charge, repair or replace the components of such unit that prove to be defective for a period of six months from the date of purchase.

For this warranty to be effective, the bill of sale must show that the unit was purchased from an "Authorized iPort Dealer" and must list the price paid. This warranty shall apply exclusively to the original purchaser.

Furthermore, this warranty shall not apply if:

- 1) Damage to the unit was caused by accident, abuse, or misuse;
- 2) The unit was opened, modified, or repaired by unauthorized personnel; or
- 3) The unit was not used as outlined in the operating instructions.

EXCLUSIONS AND LIMITATIONS

The warranty set forth above is in lieu of all other warranties, express or implied, of merchantability, fitness for a particular purpose, or otherwise. The warranty is limited to iPort products registered herein and specifically excludes any damage to loudspeakers and other allied or associated equipment which may result for any reason from use with this product. iPort shall, in no event, be liable for incidental or consequential damages arising from any breach of this warranty or otherwise. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

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